

WHAT IS CLAIMED IS:

1. A method for servicing subscriber ends by utilizing a virtual local area network (VLAN) on an asymmetrical digital subscriber line (ADSL) transmission unit at the customer premises end (ATU-R) of said ADSL, said method
5 comprising:

utilizing said VLAN to generate a plurality of virtual connections in an ADSL connection;

coupling equipment of each subscriber end to a plurality of subscriber input/output (I/O) ports in said ATU-R;

10 adding a switching hub in said ATU-R for identifying tagged data in said virtual connections;

connecting each subscriber end in said virtual connections to said switching hub via Ethernet; and

15 assigning each subscriber I/O port in said switching hub to one of said virtual connections having a distinct tag.

2. The method of claim 1, further comprising:

providing a switching chip in said switching hub for performing a packet switching;

20 as a data packet sent from a central office to said ATU-R in said subscriber end through said ADSL connection, commanding a central processing unit (CPU) of said ATU-R to identify said received data packet for determining which one of said subscriber ends that an identification of said data packet on said virtual connection belongs to;

25 adding a corresponding VLAN tag on said data packet based on determination wherein said identification is included in said virtual connection belonging to said subscriber end; and

as said data packet sent to said switching chip, commanding said switching

chip to send said data packet to said specified subscriber end based on said identification of said data packet on said virtual connection.

3. The method of claim 1, further comprising:

as one of said subscriber ends has sent said data packet to said central
5 office through said ADSL connection, commanding said switching chip to perform an identification based on said received data packet for determining which one of said virtual connections that said subscriber I/O port belongs to;

adding said corresponding VLAN tag on said data packet and said identification associated with said virtual connection prior to sending to said CPU;

10 and

commanding said CPU to transmit said data packet through said corresponding virtual connection based on said identification of said data packet on said virtual connection.